Literature Survey

1) A Design of Mobile Health for Android Applications

In this paper, a mobile health application is developed to recommend healthcare support referring to exercise in the Android Smart phone. This application has been designed to provide exercise advice depending on Body Mass Index (BMI) and the energy used in each activity or sport. Moreover, it has been designed to store information in a database and to have the ability to produce to users.

'Mobile Health' can combine health and mobile device technology, especially smart phones. It can be defined as 'medical and public health practice supported by mobile device.

The proposed android architectural framework and module development encompasses four modules as follows:

1) Food Calorie intake Calculator module:

   This module computes the customized menu choice and offers suggestions for other menu options to achieve the goal of either losing weight or eating healthy foods.

2) BMI Calculator:

   This module calculates the Body Mass Index (BMI) of the user based on the height and weight, using the formula $BMI = Weight\ (kg)/\ (Height\ (m))^2$. The essence of this module is to generate useful information regarding the BMI parameter used for ascertaining a person's of getting health related issues.

3) Disease Risk Determinator Module:

   Based on the computation of the BMI and the user specifications of the nature of work, exercise routine and other factors, the Disease Risk Determinator module then determines users risk profile and tracks it while offering excellent Meal time Planner to get back into shape and avoid unnecessary hospital visits due to poor healthy lifestyle.

4) Meal Time Planner:

This module presents to the user the various meal plans for breakfast, lunch, and dinner based on the amount of calories needed by the person taking into consideration, age, type and nature of work, several favorite dishes for breakfast, lunch and dinner.

It has one Exercise related index, to evaluate and indicate the change

of body after performing exercise.

There are few indexes that considered:

1) Body Mass Index (BMI)

2) Basal Metabolic Rate (BMR)

3) Metabolic Equivalent of Task

Further, the application developer has made a facility for the users

to consult doctors through application, for having safe exercise plan and

health related issues.

The developer had system components like web application that

enables information via web, databases server which stores information

related to meal, web service, android applications.

Limitations:

Firstly this app is designed in the most basic way so that every age people

from different countries and continents can use it easily , so it doesn't consist

of high display graphics anywhere present in the app .

This app doesn't support IOS (Iphone operating system).

Conclusion:

This paper presented necessary guidance and health recommendations for mobile users who have installed the android applications. The proposed system model generates food tips and recommendations for different categories of people who are underweight, overweight or obese due to a computation of their body mass indices. It specifies certain exercise regimen types that are appropriate for these different kinds of people. Further expansion to allow for versatility and ubiquity is to implement the Personal Health Monitor app on other mobile platforms apart from android. This design of a Health is One mobile health application called "Home workout on the Android Operating System" has been added. It has been designed to recommend exercise for each individual who has different physical characteristics (e.g. weight and height). Therefore, he or she can exercise appropriately, not too less or too much, with different kinds of workouts that he or she selects. Also, several functions have been included (e.g. calculation of BMI, footstep calculator, water reminder and many more). Furthermore, this mobile Health application has been also designed to be able to use easily irrespective of any age.

Overcome on Limitations:

We have developed an application referring to the features used in the above project. Also we tried to add some extra features like water reminder, footsteps counter, etc. 'Health is One' can be accessed through any operating system i.e., android or iOS. Also, this application does not consume much space in device. There are further plans to add some more features like Consultation with doctors directly from home 24/7, online gym trainers, online dietician, etc.

2) Literarture Survey – Paper(2)

The use of mobile computing has exploded and reached the commercial industry and mainstream consumers via smartphones, personal digital assistants (PDAs) [16], mobile phones and tablets. According to Gartner Inc, worldwide mobile connections will grow up to 7.4 billion by 2015, and mobile applications offer benefits that cannot be matched by desktop products [11]. In a recent example, Apple launched new mobile phone features on the iPhone 5S that could benefit mobile health developers through its movement sensor to detect a user"s movement. A variety of sensors such as microphones and cameras [30] can be greatly employed by mobile health (m-health) apps. Moreover, mobile guide systems have become significantly advanced and offer context-based personalisation, user collaboration and social interaction [11]. These examples of the current advantages of mobile computing drive the healthcare community to seek ways to efficiently utilise the technology to better manage people"s wellbeing. One of the solutions that has been proposed by healthcare providers is to make use of the available internet-based technologies, such as mobile phones, which offer tremendous access to information in order to help people manage their health. The technologies allow healthcare providers to upload medical records, lab results, images and drug information to handheld devices such as PDAs, tablets, push-to-talk devices, cell phones or smartphones. As a consequence, patients or users could easily know about their health diagnostics, easily exchange information and even can self-monitor and have full access to their record and freely communicate with physicians in a comfortable way. Patients are using these technologies to monitor specific aspects of their health, fill in gaps in their medical care, and take more responsibility for their wellbeing [1]. In the last decade, advances in wireless communications and network technologies have had a substantial impact on m-health [14]. M-health apps are receiving increased attention largely due to the global penetration of mobile technologies. A rapid growth in health technology is underway. With the growing use of mobile phones, m-health has evolved rapidly and its revolution demonstrates a tremendous impact particularly in developing countries. This is a positive development for physicians, patients, healthcare institutions and general m-health app users. Thus, healthcare practitioners are now progressively implementing m-health apps in their practices.

- Miscellaneous Applications: Reminders, appointment scheduling and communication among departments are covered in this type of app.

- Diagnostic Tool Applications: Patients can use the app to link their phone with other devices such as sensors, glucose meter and heart rate devices in order to get measurement data.

- Medication Adherence: Suitable knowledge and education is offered to patients and physicians in order to provide reminders and schedules for taking medication at the right time.

- Chronic Disease Management: This type of app aids the patient to monitor their situation without the need to visit a doctor.

- Remote Monitoring: This type of app provides safety and reduces the vulnerability of the users to injury; for example, it is used to monitor patients with disabilities and older adults.

- Personal Wellness and Healthy Living: This kind of app supplies news, data and educational materials about healthcare.

- Access to Health Information: This type of app assists patients to track their healthcare services. The patient can choose whether or not to share their information with family, caregivers and physicians.

- Teaching/Training: This type of app provides information and educational materials to help patients to understand some illnesses, such as animations or videos to increase patient understanding.

- Communication: This type of app provides actual services to patients and healthcare providers such as the provision of WiMAX technology for distribution video including streaming video.

Limitations:

Even though the authors believe that their work is sufficient to provide guidelines for m-health app requirements, the study is not without its limitations. For instance, the number of papers that are relevant to this study"s context is small which limits the ability to generalise our findings. Further, our review was widened to include different health areas and diseases but future research may focus solely on one area or disease. However, this limitation offered

an opportunity for our research as healthcare providers have yet to fully address the m-health app requirements for mobile phones. In this regard, our work can help the healthcare providers to focus their attention on the key features and content of m-health apps.

Contribution and Conclusion:

This paper has proposed an m-health framework by identifying the m-health app critical features and content related to m-health to ensure that the needs of the targeted user groups (physiotherapist, patient and caregiver) are met. It is the authors aim that m-health technology adoption will increase in the near future by improving patient engagement. We believe the findings discussed in this paper can leverage the problem of integration cooperative users into the design of systems to support mobile healthcare work. By answering the following questions, our findings can be summarised into some key points, and future studies might take these factors into consideration to ensure the development of effective m-health apps.